

EXHIBIT 110

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Gilbert

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(54) **TRANSPARENT INTERACTIVE PRINTING INTERFACE**

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(51) **Int. Cl.**

G06F 3/12 (2006.01)
G06F 3/0488 (2013.01)
G06F 3/01 (2006.01)
G07C 13/00 (2006.01)

(52) **U.S. Cl.**

CPC **G06F 3/1204** (2013.01); **G06F 3/012** (2013.01); **G06F 3/013** (2013.01); **G06F 3/04883** (2013.01); **G06F 3/1208** (2013.01); **G06F 3/1256** (2013.01); **G07C 13/00** (2013.01)

(58) **Field of Classification Search**

CPC combination set(s) only.

See application file for complete search history.

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(57) **ABSTRACT**

Described generally herein are systems, apparatuses, methods, and computer programs to assist a user in marking a document in response to the user engaging an intuitive, transparent interface. The apparatus can be caused to receive, in response to a gesture by a user, an indication related to a region of a transparent interactive display, the region of the transparent interactive display corresponding to a region of a document viewable by the user through the transparent interactive display. Apparatus can determine, based at least upon the indication, one or more fields of the document associated with the indication and input information associated with the one or more fields of the document. Apparatus can transmit a signal indicative of the one or more fields of the document and the input information to a printing device, the printing device configured to print the input information in the fields of the document.

21 Claims, 8 Drawing Sheets

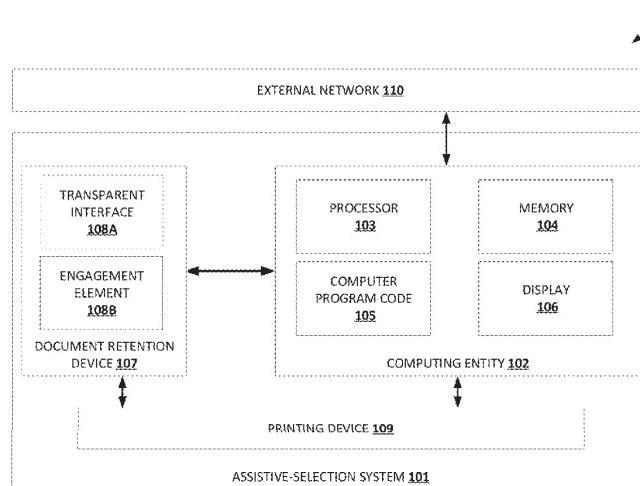


Exhibit
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1**TRANSPARENT INTERACTIVE PRINTING
INTERFACE****CROSS-REFERENCE TO RELATED
APPLICATIONS**

This application claims priority to, and the benefit of, U.S. Provisional Patent Application Ser. No. 62/846,118, filed May 10, 2019, entitled "Transparent Interactive Printing Interface," the entire disclosures of which are hereby incorporated herein by reference in their entirety for all purposes.

FIELD OF THE INVENTION

Example embodiments described herein relate generally to the field of displays, and in particular transparent, interactive interfaces.

BACKGROUND

Ballot-marking devices (BMDs) such as electronic ballot markers (EMBs), electronically-assisted ballot markers, and voting machines are often non-transparent, hackable, and overly complex. Such conventional devices often result in a trade-off between consistency and transparency, for instance because using paper ballots typically results in a relatively large amount of human error and erroneous ballots being discarded, however it is typically difficult or impossible to fully examine and trace the process and result of entering selections for a ballot using conventional BMDs and EMBS.

BRIEF SUMMARY

In general, embodiments of the present invention provide methods, apparatus, systems, computing devices, computing entities, and/or the like for transparent, interactive printing interfaces for ballot-processing. Certain embodiments utilize systems, methods, and computer program products that enable a user to select a ballot decision for a particular field on the transparent interactive printing interface, resulting in real-time printing on a paper ballot or the like positioned behind the transparent interactive printing interface.

In accordance with one aspect, a method is provided. In one embodiment, the method can be a computer-implemented method comprising receiving, in response to a gesture by a user, an indication related to a region of a transparent interactive display, the region of the transparent interactive display corresponding to a region of a document viewable by the user through the transparent interactive display. In some embodiments, the computer-implemented method can further comprise determining, based at least upon the indication, one or more fields of the document associated with the indication and input information associated with the one or more fields of the document. In some embodiments, the computer-implemented method can further comprise transmitting a signal indicative of the one or more fields of the document and the input information to a printing device, the printing device configured to print the input information in the one or more fields of the document. IN some embodiments, the document can be one of a voting ballot, a survey, an application, a poll, a canvass, an assessment, a declaration, a written oath, a form, a bill, a check, a statement, a deed, a manuscript, and a certificate. In some embodiments, the computer-implemented method can further comprise causing the printing device to print the input information in the one or more fields of the document.

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In accordance with another aspect, a computer program product is provided. The computer program product may comprise at least one computer-readable storage medium having computer-readable program code portions stored therein, the computer-readable program code portions comprising executable portions configured to carry out a process, such as a computer-implemented method. In some embodiments, the computer program product can comprise a non-transitory computer storage medium comprising instructions configured to cause one or more processors to at least perform receiving, in response to a gesture by a user, an indication related to a region of a transparent interactive display, the region of the transparent interactive display corresponding to a region of a document viewable by the user through the transparent interactive display. In some embodiments, the computer program product can comprise a non-transitory computer storage medium comprising instructions configured to cause one or more processors to at least perform determining, based at least upon the indication, one or more fields of the document associated with the indication and input information associated with the one or more fields of the document. In some embodiments, the computer program product can comprise a non-transitory computer storage medium comprising instructions configured to cause one or more processors to at least perform transmitting a signal indicative of the one or more fields of the document and the input information to a printing device, the printing device configured to print the input information in the one or more fields of the document. In some embodiments, the document is one of a voting ballot, a survey, an application, a poll, a canvass, an assessment, a declaration, a written oath, a form, a bill, a check, a statement, a deed, a manuscript, and a certificate. In some embodiments, the computer program product can comprise a non-transitory computer storage medium comprising instructions configured to cause one or more processors to at least perform causing the printing device to print the input information in the one or more fields of the document.

In accordance with another aspect, an apparatus comprising a transparent, interactive interface operably coupled to a printing device and configured to retain a printing substrate within or behind the transparent, interactive interface is provided. In one embodiment, the apparatus may be configured to carry out a computer-implemented method. In some embodiments, the apparatus can be configured to carry out a computer-implemented method comprising receiving, in response to a gesture by a user, an indication related to a region of a transparent interactive display, the region of the transparent interactive display corresponding to a region of a document viewable by the user through the transparent interactive display. In some embodiments, the apparatus can be configured to carry out a computer-implemented method further comprising determining, based at least upon the indication, one or more fields of the document associated with the indication and input information associated with the one or more fields of the document. In some embodiments, the apparatus can be configured to carry out a computer-implemented method further comprising transmitting a signal indicative of the one or more fields of the document and the input information to a printing device, the printing device configured to print the input information in the one or more fields of the document. In some embodiments, the document can be one of a voting ballot, a survey, an application, a poll, a canvass, an assessment, a declaration, a written oath, a form, a bill, a check, a statement, a deed, a manuscript, and a certificate. In some embodiments, the apparatus can be further configured to carry out a computer-